What is claimed is:

1. A signal processor for providing input signals to a direct conversion modulator comprising means for producing the square root of input signals and providing square root signals to the direct conversion modulator.

2. The signal processor of claim 1 wherein said square root circuit is comprised in a digital signal processor.

3. The signal processor of claim 1 wherein said square root circuit comprises an analog circuit.

4. A direct conversion transmitter comprising signal means providing an input signal at a baseband frequency;

a square root circuit for providing a modulation input signal for a modulator at a square root of baseband frequency;

a modulator modulating the output of the square root circuit, said modulator comprising a local oscillator providing a frequency of one half RF, where RF is the transmission frequency;

a variable gain amplifier for a gain applied to the output of said modulator;

a squaring circuit for squaring the modulated signal; and

gain control means for providing dynamic range in the radio frequency, said gain control means providing a output for a coupling to a transmission antenna.

5. The transmitter according to claim 4 wherein said signal means provides an in-phase signal and quadrature signal for modulation and wherein said modulator comprises a Gilbert cell modulator.

6. The transmitter of claim 5 wherein said circuit is comprised in a digital signal processor receiving the input signals.

7. The transmitter of claim 5 wherein said square root circuit comprises an analog circuit.

8. The transmitter of claim 6 wherein said squaring circuit comprises a Gilbert multiplier.

9. In a direct conversion transmitter having the pre-distortion means process a baseband signal to be modulated at a frequency lower than a baseband frequency, the improvement wherein said pre-distortion means comprises a square root circuit.

10. The improvement according to claim 9 where in said a transmitter further comprises a modulator utilizing a local oscillator frequency which is one half of the transmission frequency.

11. The transmitter according to claim 10 wherein variable gain is applied in the domain of the pre-distorted signal.

12. The improvement of claim 11 further comprising a squaring circuit for squaring the modulated, gain controlled initial frequency.

13. The transmitter according to claim 12 for the comprising variable gain means for controlling gain in the radio frequency domain.